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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,085	01/20/2004	Sik-sun Choi	45913	7148

1609 7590 11/07/2006

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EXAMINER

UHLENHAKE, JASON S

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 11/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/759,085	CHOI ET AL.	
	Examiner	Art Unit	
	Jason Uhlenhake	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

Figures 2A-2D, 3A-3B, and 4A-4B should be designated by a legend such as -- Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 7-8, 10-11, 15-17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd et al (U.S. Pub. 2003/0142174) in view of Kim (U.S. Pat. 6,739,712)

Boyd et al discloses:

- ***regarding claims 1, 10, 16***, a head chip (170, Figure 4) which a nozzle (176a – 176b, Figure 4) is formed to fire ink onto a printing paper

Art Unit: 2853

- a flexible circuit (120) board for transceiving signals with a printer system (Figure 1)
- a housing (110, Figure 1) comprising a receiving part (Figure 6) formed at one side of the bottom to receive and fix the print head unit
- the receiving part (Figure 6) having an ink feed hole including a dam (190a, Figure 6) on its circumference, and a secondary dam (190b, Figure 6) of the same height as the dam (190a, Figure 6), and an ink chamber (160, Figure 5) disposed therein
- **regarding claim 2**, the housing (110, Figure 1) comprises a stand pipe (Paragraph 0020, Figure 3) chamber formed near the receiving part
- **regarding claim 3**, a filter (150, Figure 5) disposed between the ink chamber (160) and the stand pipe (Paragraph 0020) to filter the ink supplied to the print head
- **regarding claims 7, 15, 20**, the secondary dam (190b, Figure 6) is larger than half of the whole area of the receiving part (Figure 6)
- **regarding claims 8, 11, 17**, wherein the secondary dam (190b, Figure 6) is extended parallel to the ink feed hole (167, Figure 6).

Boyd et al does not disclose expressly:

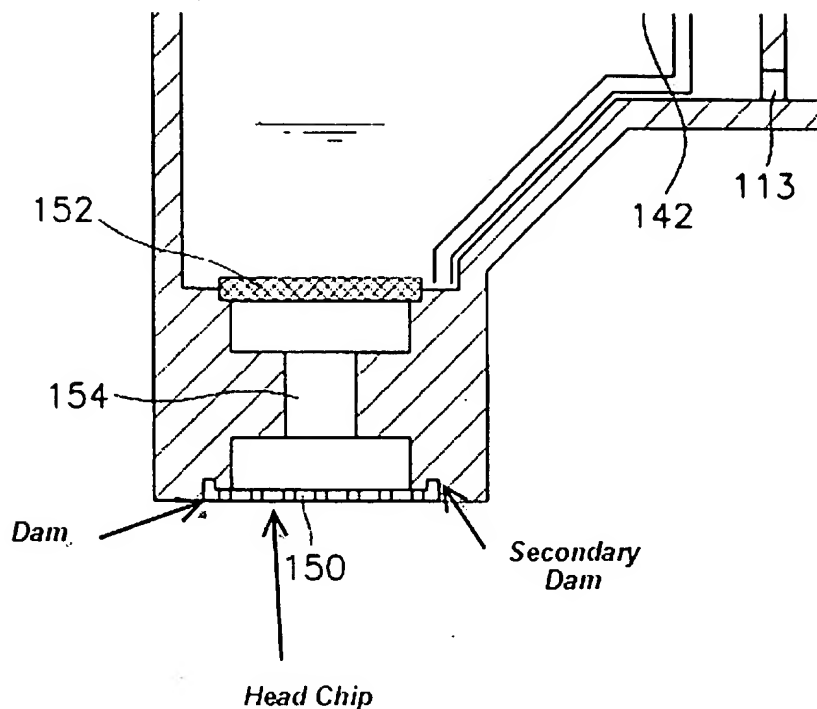
- **regarding claims 1, 10**, the receiving part having an ink feed hole including a dam on its circumference to support the head chip, and a separate (spaced away) secondary dam of the same height as the dam which also supports the head chip, and an ink chamber disposed therein.

- **regarding claim 16**, first dam disposed about the ink feed hole on the bottom of the receiving part for supporting the head chip, the first dam protruding outwardly from the bottom of the receiving part; and at least one secondary dam protruding outwardly from the bottom of the receiving part for supporting the head chip, the first dam and the at least on least one secondary dam having the same height.

Kim discloses:

- **regarding claims 1, 10**, the receiving part having an ink feed hole including a dam on its perimeter to support the head chip (150), and a separate (spaced away) secondary dam of the same height as the dam which also supports the head chip (150), and an ink chamber disposed therein (Figure 2)

- **regarding claim 16**, first dam disposed about the ink feed hole on the bottom of the receiving part for supporting the head chip (150), the first dam protruding outwardly from the bottom of the receiving part; and at least one secondary dam protruding outwardly from the bottom of the receiving part for supporting the head chip (150), the first dam and the at least on least one secondary dam having the same height (Figure 2)



At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Kim into the device of Boyd et al, for the purpose of capturing and retaining contaminant ink particles.

Claims 4-6, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd et al (U.S. Pub. 2003/0142174) as modified by Kim (U.S. Pat. 6,739,712) as applied to claim 1 above, and further in view of Killmeier et al (U.S. Pub. 2004/0032468).

Boyd et al discloses:

- **regarding claim 5**, the secondary dam (190b, Figure 6) is formed in a broader side with respect to the ink feed hole (167, Figure 6)

- **regarding claim 6**, wherein the secondary dam (190b, Figure 6) is formed with respect to the ink feed hole (167, Figure 6).

Boyd et al does not disclose the following:

- **regarding claims 4, 14**, a print head that is fixed by an adhesive in the receiving part, in an area where the dam and the secondary dam are not formed
- **regarding claim 5**, in the adhesive-applied area in the receiving part the secondary dam is formed in a broader side with respect to the ink feed hole
- **regarding claim 6**, the secondary dam is formed such that the adhesive-applied areas are symmetrical with respect to the ink feed hole.

Killmeier et al discloses the following:

- **regarding claims 4, 14**, a print head that is fixed by an adhesive in the receiving part (Paragraph 0008), for the purpose of bonding an adhesive on the print head to protect the electrical circuit flowing up along side of the chip for each print head (Paragraph 0004) and the secondary dam will prevent particles that settle from entering the ink feed hole
- **regarding claims 5 and 6**, the adhesive-applied area in the receiving part (Paragraph 0008), for the purpose of bonding an adhesive on the print head to protect the electrical circuit flowing up along side of the chip for each print head (Paragraph 0004) and the secondary dam will prevent particles that settle from entering the ink feed hole

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching to the print head fixed by an adhesive

Art Unit: 2853

in the receiving part and the adhesive-applied area as taught by Killmeier et al into the device of Boyd et al as modified by Kim. The motivation for doing so would have been to use a bond adhesive on the print head to protect the electrical circuit flowing up along side of the chip for each print head (Paragraph 0004) and the secondary dam will prevent particles that settle from entering the ink feed hole.

Claims 9, 12-13, 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd et al (U.S. Pub. 2003/0142174) as modified by Kim (U.S. Pat. 6,739,712) as applied to claim 1 above, and further in view of Powers (U.S. Pat. 5,975,687).

Boyd et al discloses all of the claimed limitations except for the following:

- ***regarding claims 9, 12, 13, 18, 19***, a plurality of the secondary dams, wherein at least one of the secondary dams are extended in a direction of the ink feed hole and parallel reciprocally.

Powers discloses the following:

- ***regarding claims 9, 12, 13, 18, 19***, a plurality of dams (14, Figure 1) wherein at least one of the secondary dams are extended in a direction of the ink feed hole and parallel reciprocally (Figures 1 and 3), for the purpose of limiting the amount of movement of the liquid and reduce the amount of particles in the liquid.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of the plurality of dams extended in a direction of the ink feed hole as taught by Powers into the device of Boyd

Art Unit: 2853

as modified by Kim. The motivation for doing so would be to limit the amount of movement of the liquid and reduce the amount of particles in the liquid.

Response to Arguments

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection. Please see the above rejections regarding Boyd et al (U.S. Pub. 2003/0142174) in view of Kim (U.S. Pat. 6,739,712). They disclose an ink feed hole including a dam on its perimeter to support the head chip/printhead, and a separate secondary dam of the same height also supporting the head chip/printhead (Kim: Figure 2)

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


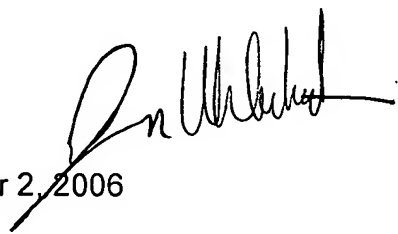
Art Unit: 2853

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Uhlenhake whose telephone number is (571) 272-5916. The examiner can normally be reached on Monday - Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JSU
November 2, 2006



STEPHEN MEIER
SUPERVISORY PATENT EXAMINER